

### **REMARKS**

Claims 1-138 are now pending in the application. Claims 139-142 are added herein and do not introduce new matter since they are supported by the specification of the present application as filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

Applicants would like to thank the Examiner for courtesy extended during the interview on July 26, 2007.

### **REJECTION UNDER 35 U.S.C. § 102**

Claims 25-30, 32-39, 41-45, 47-55, 57-69, 71-76, 78-85, 87-91, 93-101, 103-115, 117-122, 124-131, and 133-137 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Walton (U.S. Pat. No. 2005/0002468). This rejection is respectfully traversed.

With respect to Claim 1, Walton fails to at least show, teach or suggest a link adaptation module that dynamically adjusts bandwidth.

By adjusting bandwidth, the link adaptation module accounts for different operating environments, such as a rich-scattering environment, a line-of-sight (LOS) environment, and other operating environments. For example, in a LOS environment insufficient scattering and/or spacing between pairs of antennae at transceivers can cause fading to be correlated. This fading reduces performance and throughput of a communication system. To improve throughput, transmit power may be increased. However, many wireless communication systems at given bandwidths are power-limited

by regulatory bodies. The present invention as recited in Claim 1 is able to at least maintain throughput by adjusting bandwidth.

Bandwidth refers to an amount of data that can be transmitted in a fixed amount of time, typically expressed in bits per second (bps). More specifically, the bandwidth of a device refers to the transmission capability of that device or the amount of data that the device is able to transmit in a fixed amount of time. Throughput per channel bandwidth refers to an amount of data that a channel, having a given bandwidth, is transmitting in a specified amount of time, typically expressed in bps per hertz (H). Throughput of a channel may vary depending upon performance of that channel while bandwidth remains constant.

As best understood by Applicants, Walton discloses systems with different corresponding bandwidth. In paragraph [0082], Walton states that attenuation of a system depends on bandwidth of that system. Walton states that different processing schemes may be used for systems with different bandwidths. In other words, a first processing scheme may be used for a first system that has a first bandwidth and low attenuation. A second processing scheme may be used on a second or different system that has a second bandwidth and high attenuation. Walton does not disclose bandwidth adjustment for a particular system.

The Examiner alleges that Walton discloses the use of redundancy and thus discloses increasing and adjusting bandwidth. In the Interview, the Examiner stated that since redundancy is used, an increased amount of bits are transmitted in the same amount of time and thus throughput is increased. The Examiner further stated that

since throughput is increased, bandwidth is increased. Applicants respectfully traverse the Examiner's foregoing position.

Applicants submit that the introduction of redundancy does not imply an increase in throughput, but rather a decrease in throughput. In contradistinction, Walton paragraph [0226] states that increased redundancy implies a sacrifice in overall throughput. When redundancy is introduced, for a given transmission rate, an increased amount of bits are transmitted over an extended amount of time. Walton does not state or suggest that transmission rate of the system is increased when redundancy is used. For this reason, Walton minimizes redundancy to maximize throughput. See paragraph [0232] of Walton.

Also, maximizing throughput does not imply adjusting bandwidth. Throughput may be changed while bandwidth of a channel or a device remains constant. In Walton a forward error correction code is used to maximize throughput of a channel. Although throughput is maximized, the bandwidth of that channel is unaltered. The system of Walton aims to maximize use of a channel having a given bandwidth.

Walton also fails to show, teach or suggest dynamic adjustment of bandwidth of a wireless communications device based on a transmission error rate and a correlation measurement at a remote wireless communications device. As best understood by Applicants, Walton discloses a communication system that adjusts coding and modulation based on signal-to-noise ratio (SNR). Adjusting coding and/or modulation is clearly different than adjusting bandwidth. Coding may refer to a process of converting information obtained on a subject or unit into coded value. Modulation may refer to the

coding of information onto a carrier frequency. Thus, coding and/or modulation may be adjusted without affecting bandwidth.

For anticipation to be present under 35 U.S.C §102(b), there must be no difference between the claimed invention and the reference disclosure as viewed by one skilled in the field of the invention. *Scripps Clinic & Res. Found. V. Genentech, Inc.*, 18 USPQ.2d 1001 (Fed. Cir. 1991). All of the limitations of the claim must be inherent or expressly disclosed and must be arranged as in the claim. *Constant v. Advanced Micro-Devices, Inc.*, 7 USPQ.2d 1057 (Fed. Cir. 1988).

Therefore, Claim 1 is allowable for at least the above reasons. Claims 25, 47, 71, 93 and 117 are allowable for at least similar reasons as Claim 1. Claims 2-24, 26-46, 48-70, 72, 92, 94-116 and 118-138 ultimately depend from Claims 1, 25, 47, 71, 93 and 117 and are allowable for at least similar reasons.

#### **REJECTION UNDER 35 U.S.C. § 103**

Claims 1-9, 11-24, 40, 46, 70, 86, 92, 116, 132 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Walton (U.S. Pat. No. 2005/0002468) in view of Edwards (U.S. Pat. No. 2004/0059825). This rejection is respectfully traversed.

With respect to Claim 1, Walton and Edwards fail to at least show, teach or suggest a link adaptation module that dynamically adjusts a bandwidth of a wireless communications device based on a transmission error rate and a correlation measurement at a remote wireless communications device.

Applicants have shown above that Walton clearly fails to disclose bandwidth adjustment as claimed.

The Examiner relies on Edwards for the disclosure of a link adaptation device located in a medium access control (MAC) device. Although Edwards may disclose a MAC device, Edwards fails to disclose bandwidth adjustment as claimed. Applicants are unable to find mention of the term bandwidth or any suggestion of bandwidth adjustment in Edwards.

It is a longstanding rule that to establish a prima facie case of obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 143 (CCPA 1974), see MPEP §2143.03.

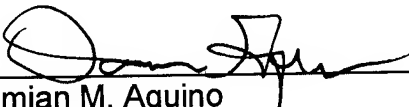
Therefore, Claim 1 is allowable for at least these reasons. Claims 25, 47, 71, 93 and 117 are allowable for at least similar reasons as Claim 1. Claims 2-24, 26-46, 48-70, 72, 92, 94-116 and 118-138 ultimately depend from Claims 1, 25, 47, 71, 93 and 117 and are allowable for at least similar reasons.

## CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: August 6, 2007

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